

ABSTRACT

A method and apparatus for reducing the carbon monoxide content of a hydrogen rich gas including a catalyst bed containing an oxidation catalyst, a porous tube positioned substantially within the catalyst bed for distributing an oxygen-containing stream throughout the catalyst bed, and a cooling jacket for maintaining the reactor operating temperature in a desired range. The porous tube can be constructed as a sintered stainless steel tube or as an alumina tube or as any equivalent porous tube that is known to those of skill in the art to perform the objectives of this method and apparatus. The porous tube is generally positioned along the length of the catalyst bed in manner that optimizes dispersion of the oxygen-containing stream throughout the catalyst bed. The reactor operating temperature is controlled by a cooling jacket to from about 90°C to about 180°C, more preferably from about 90°C to about 150°C. The cooling jacket should contain a circulating coolant that can be water, steam, air, or the hydrocarbon fuel to the fuel processor.